



X-Plain™ Ultrasound

Reference Summary

An ultrasound allows a doctor to look at organs and structures inside the body. Ultrasound images are used to see the heart, blood vessels, kidneys, liver, gallbladder, pancreas, spleen, and genital tract. They are also used to examine unborn babies as they grow in the uterus. This reference summary will help you understand ultrasound and its benefits.

How Does It Work?

Ultrasound technology does NOT use radiation, so it is very safe.

Ultrasound machines generate high-frequency sound waves. These waves are pointed at different organs inside the body using a hand-held device called a transducer. The waves bounce off the tissues in the body and are picked back up by the transducer. The computer then processes the reflected sound waves and produces pictures.



The computer can also check blood flow and make sure there are no obstructions in blood

vessels. This is called doppler ultrasound.

Ultrasound Test

A doctor or a specialized ultrasound technologist performs the ultrasound test. Your doctor will tell you how to prepare for the test, depending on which area of the body will be examined. Ask your doctor if you can eat or drink before the ultrasound. Also, ask whether it is okay for you to urinate before the test. Some ultrasound tests rely on the bladder being full to better see the structures in the pelvis. Clothing must be removed from the part of the body being imaged. A special gel is placed on the tip of the transducer to improve the quality of the sound waves. The gel may feel cold.



The transducer is moved over the area to be examined. Pictures show up and are stored on the computer. You might feel

some pressure as the transducer is moved on your body.

You may be asked to change your position for clearer pictures. When the doctor or technologist is satisfied with the picture quality, the test is done and the gel is wiped off.

A doctor who specializes in reading ultrasound images will analyze the pictures.

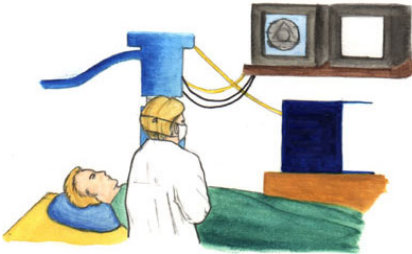
Invasive Ultrasounds

Most ultrasound tests are done with a transducer on the skin. However, some ultrasound tests require the transducer to be inserted into the body. These are called invasive ultrasounds. Some examples of invasive ultrasounds are:

- Transesophageal echocardiogram--shows the heart while the transducer is in the feeding tube.
- Transrectal ultrasound--shows the prostate while the transducer is in the rectum.
- Transvaginal ultrasound--shows the uterus and ovaries while the transducer is in the vagina.

Ultrasounds are not painful! Transesophageal, transrectal, and transvaginal ultrasounds may not be very comfortable, but with lubrication and some sedation they are very bearable.

Ultrasound can help doctors get tissue from abnormal areas in the body by guiding the needle or other instrument during the procedure. This is called ultrasound-guided biopsy.



Ultrasounds can be part of open surgeries, too. For example, a neurosurgeon may need to locate a brain tumor deep inside the brain. Using ultrasound during brain surgery would be helpful in this case.

Uses

Ultrasound can be used anywhere on the body. The brain of newborns can be seen through the soft spot in their skull using an ultrasound. Ultrasounds are very helpful in checking the blood flow in the carotid arteries in the neck. Ultrasounds can check the thyroid gland in the neck. Ultrasounds can produce a very detailed picture of the heart. In the abdomen and pelvis, ultrasounds can show the liver, gall bladder, ovaries, uterus, bladder, kidneys, and various other abdominal structures. In the legs, ultrasound can show the blood flow in the arteries and can help detect blood clots in the veins. The prostate can be seen using a transrectal ultrasound.

A testicular ultrasound can reveal abnormalities in the scrotum.

A transvaginal ultrasound can show the uterus and ovaries in great details.

Ultrasounds are used to see the fetus during pregnancy. Doctors make sure the baby is growing normally and sometimes determine whether it is a boy or girl!

Summary

Ultrasounds are painless tests used to examine different organs in the body.

Ultrasounds have no risk and involves no radiation. In addition to still images, ultrasound can produce moving pictures.

If your doctor recommends that you have an ultrasound, you can ask your doctor or technologist to show you some of your body's pictures!